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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

CLARKE, Y

ART UNIT PAPER NUMBER

1752

DATE MAILED: 11/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/463,059

Applicant(s)

NAKANO, TATSUYA

Examiner

Yvette M Clarke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

This is written in reference to application number 09/463,059 filed on January 19, 2000.

Priority

1. The translation of foreign priority document(s) JP 244067/1998 and JP 143536/1998 has/have been entered and fully considered. Thereby perfecting the priority dates of May 25, 1998 and August 28, 1998.

Terminal Disclaimer

2. The terminal disclaimer filed on July 26, 2001 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of US 6218569 B1 has been reviewed and is NOT accepted.

3. The person who signed the terminal disclaimer is not recognized as an officer of the assignee, and he/she has not been established as being authorized to act on behalf of the assignee. See MPEP § 324.

4. An attorney or agent, not of record, is not authorized to sign a terminal disclaimer in the capacity as an attorney or agent acting in a representative capacity as provided by 37 CFR 1.34 (a). See 37 CFR 1.321(b) and/or (c).

5. It would be acceptable for a person, other than a recognized officer, to execute a terminal disclaimer, provided the record for the application includes a statement that the person is empowered to sign terminal disclaimers and/or act on behalf of the organization.

6. Accordingly, a new terminal disclaimer, which includes the above empowerment statement, will be considered to be executed by an appropriate official of the assignee.

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A separately filed paper referencing the previously filed terminal disclaimer and containing a proper empowerment statement would also be acceptable.

Response to Amendment

7. Claim 1 has been amended by the applicant. Claims 1-14 are currently pending.

Claim Objections

8. Claims 8-9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 as written establishes that R_1 can be hydrogen, a straight chain or branched chain C_{1-4} alkyl group. However, the amendment to claim 1 prohibits R_1 of formula 2 to be anything except an alkyl or cycloalkyl group. The instant claim 9 presents formula 2d and 2e, which have R_1 as a hydrogen group. Again, the amendment to claim 1 prohibits R_1 of formula 2 to be anything except an alkyl or cycloalkyl group. Correction is requested.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

10. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants have amended claim 1 to include the statement, "provided that the acid responsive compound is the compound represented

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by formula 2 ...". It is unclear to the examiner if the applicant intended to limit the pending claims to only formula 2 or to limit the parameters of formula 2 when selected from either formula 1 or 2. For examination purposes, the examiner has interpreted the latter to be true. In the instance, the examiner is correct, she suggests further amending the claims to read, "provided when [that] the acid responsive compound is the compound represent by formula 2....". In the instant that the applicant is attempting to limit the pending claims to only formula 2, the examiner suggests deleting all references pertaining the instant formula 1.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

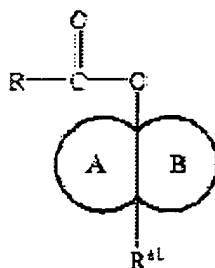
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-5 and 9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, and 4 of U.

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S. Patent No. 6218569 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because the compound of the said patent has a structure:



wherein R is a polymerizable unsaturated group such as vinyl, isopropenyl or allyl; ring A and ring B is a non-aromatic carbon; and R^{a1} can be H, OH or RCO₂. In the instance where R is CH₂=CH; R^{a1} is OH or H; and ring A and ring B is a bridged ring, a cyclohexane ring or a cyclopentane ring the limitations of the claimed invention are met. Thereby making the invention of the present application obvious in light of the teachings of the present US patent 6218569 B1.

13. The examiner notes that the applicant filed a terminal disclaimer in an attempt to overcome the said rejection. However, due to the terminal disclaimer being improper, the double patenting rejection is hereby maintained (see p. 2-6 above).

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

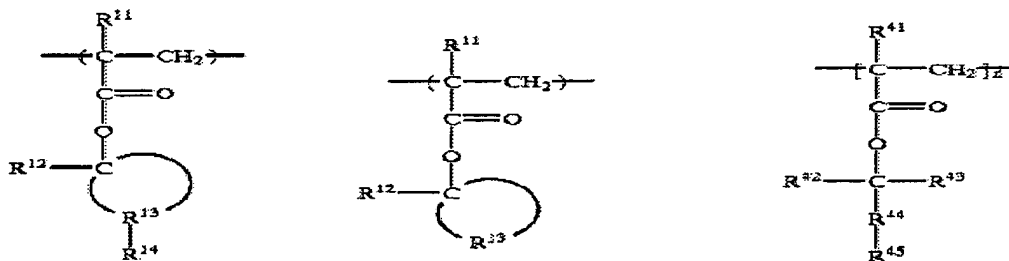
A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

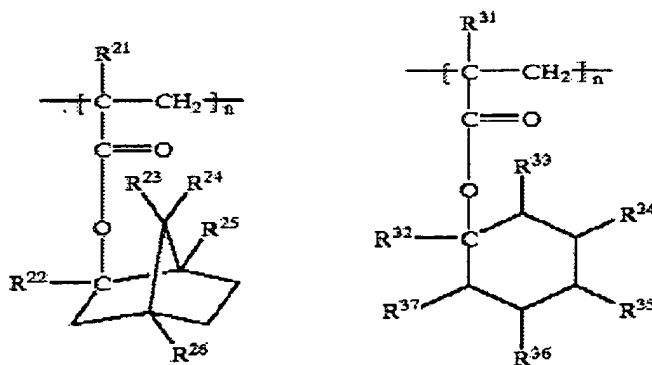
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15. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

16. Claims 1-6, 10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Asakawa et al. (US 6280897 B1). Asakawa teaches a photosensitive composition comprising a polymer having a repeating segment represented by the general formula (IA), (IB) or (4) and a compound capable of generating an acid by irradiation with actinic radiation.

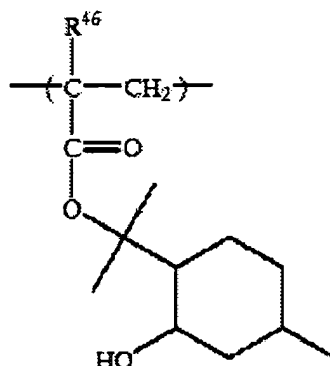


Examples of the repeating segment is represented by the general formula 1B are represented by general formula 2 and 3:



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An example of the general formula 4 can be represented by formula 5:

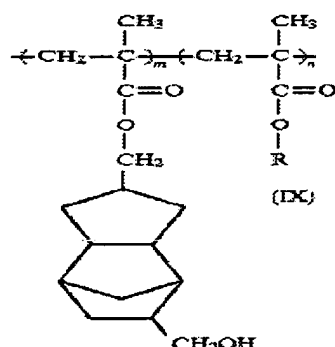


(See abstract; c. 3, l. 40-c. 6, l. 4; and c. 8, l. 21-c. 9, l. 55) Specifically Asakawa teaches a monomer (I-3), which is γ -1-methylcyclohexyl methacrylate (c. 42, l. 8-12); and monomer (I-15) which is adamantan-4-carboxylic acid, 1-acrylate (c. 44, l. 35-50). Asakawa also teaches polymer made from the monomers obtained in examples (I-1)-(I-17) (c. 45, l. 14-15). It is the examiner's position that the monomers of polymers (PI-2) and (PI-3) meet the claim limitations of formula 2 when R_1 is CH_3 and Z is cyclopentane and cyclohexane respectively (c. 45, l. 20-c. 46, l. 30). The first monomer of polymer (PI-13) meets the limitations of formula 1 when R_1 and R_2 is a methyl group and Z is a cyclohexane (c. 50, l. 19-35). The examples teach adding a photogenerator to the formed polymers and spin-coating them onto a silicon wafer. The wafer is pre-baked and then irradiated with ArF excimer laser, post exposure baked and developed to form a positive pattern (see example I-1; c. 66, l. 14-29).

17. Claims 1-5, 10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi et al. (US 5851727 A). Choi teaches a photosensitive composition comprising the taught photosensitive polymer and a photoacid generator (see abstract). Example 1 teaches the synthesis of tricyclodecanedimethanol methacrylate (c. 4, l. 49-

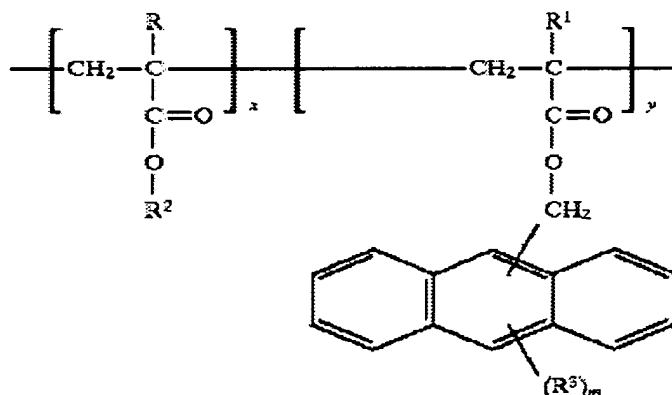
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c. 5, l. 40). Example 3 teaches the synthesis of a copolymer of tricyclodecanedimethanol methacrylate and a methacrylate derivative having the structure (c. 6, l. 15-55):



In example 5, the said copolymer is admixed with a photoacid generator to form a photosensitive composition that is coated on a silicon wafer. The said wafer is exposed and developed to form a pattern (c. 9, l. 1-16). It is the examiner's position that the taught tricyclodecanedimethanol methacrylate monomer meets the claim limitations when R1 and R1 is hydrogen and Z is a polycyclic alicyclic hydrocarbon.

18. Claims 1-5, 10 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Sinta et al. (US 5886102 A). Sinta teaches an antireflective composition comprising a binder of given formula (I):



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wherein R and R¹ is independently hydrogen or a substituted or unsubstituted C1-8 alkyl group; R² is a substituted or unsubstituted C₁₋₁₀ alkyl group; R³ is independently a halogen, C₁₋₈ alkyl, C₁₋₈ alkoxy, C₂₋₈ alkenyl, C₂₋₈ alkynyl, cyano and nitro; m is preferably 0, 1 or 2 (c. 5, l. 1-42). It is the examiner's position that the limitations of the claimed formula 1 are met when R₁ and R₂ is hydrogen; Z is a polycyclic alicyclic hydrocarbon, R₄ is any one of the taught halogen, C₁₋₈ alkyl, C₁₋₈ alkoxy groups and n is 1 or 2. The taught binder is admixed with a photoacid generator to form an antireflective composition (c. 8, l. 1-6) and coated onto a substrate.

Response to Arguments

19. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kawai et al. (RE 34061) which teaches polymers of tricyclo[5.2.1.0^{2,6}]deca-8-yl (meth)acrylate?
- Pavelchek et al. (US 5939236A, US 6190839B1 and US 6261743B1) which teaches antireflective compositions.
- Takechi et al. (US 6248920B1 and US 6207342B1) which teaches chemically amplified resist materials.
- Sinta et al. (US 6033830A) which teaches antireflective coating compositions.


21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP


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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

22. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette M Clarke whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 7-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

ymc 
November 6, 2001


JANET BAXTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700